Energy Policy Update

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The Energy Policy Update electronic newsletter is published by the Arizona Governor's Office of Energy Policy and is provided free of charge to the public. It contains verbatim excerpts from international, domestic energy, and environment-related publications that are reviewed by community outreach personnel. For inquiries, call 602-771-1143 or toll free to 800-352-.5499. To register to receive this newsletter electronically or to unsubscribe, email Gloria Castro.

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ACC Approves Rate Reductions to Ease Electric Bills, Slightly

[Willcox Range News, Oct. 23] A request for a reduction in wholesale rates for both generation and transmission service has been approved by the Arizona Corporation Commission, a move that will allow Arizona's G&T Cooperatives to lower the rates paid by its member distribution cooperatives. ...

APS Lobbyist Pitched Plan to Alter Energy Panel

[Arizona Republic, Oct. 20] Representatives of one of the state's top consulting firms pitched a plan to Arizona Public Service Co. four years ago outlining how the utility could work behind the scenes to alter a commission established by the state Constitution to regulate it. The plan proposed that APS fund a $4.3 million campaign using out-of-state non-profit groups to generate "fake controversies" regarding the Arizona Corporation Commission. Those controversies could sway voters and lead them to elect new regulators, the plan suggested, or could influence legislators to add additional seats on the commission.

APS, Solar Companies Clash Over Credits to Customers

[Arizona Republic,Oct. 29] The state's largest utility and companies that install solar panels are spending hundreds of thousands of dollars in a high-stakes battle over how much customers should be paid for the power their panels produce. As part of its strategy, Arizona Public Service Co. sent cash to two non-profit groups that support the utility's goal to make solar customers pay higher bills. Solar-panel companies have been equally aggressive, characterizing the utility as trying to "kill solar."

APS to Revise Its Plan in Solar-Subsidy Debate

Current customers would benefit; meanwhile, protesters gather at HQ

[Arizona Republic, Oct. 24] Arizona Public Service Co. said Wednesday that it plans to make a small concession in its proposal to reduce rooftop solar subsidies that could make it easier for current solar customers eventually to sell their houses.

ASU Gets $11.6 Million to Help Teacher Candidates with STEM Education

[Phoenix Business Journal, Oct. 23] The National Institute for Excellence in Teaching, in partnership with the Mary Lou Fulton Teachers College at Arizona State University,

has been awarded a three-year $11.6 million grant from the U.S. Department of Education to help its teaching candidates promote STEM education.

ASU Wins $5M Grant for Solar Energy Research

[Phoenix Business Journal, Oct. 23] Arizona State University was awarded close to $5 million to support innovative solar energy research and development to drive affordable, efficient solar power. ASU will receive about $3.5 million to help develop solar devices that near the theoretical efficiency limits of solar cells. ASU will get another $1.4 million to develop stronger, more reliable solar components. The money is part of a $60 million U.S. Energy Department investment through its SunShot Initiative, a collaborative national effort that seeks to drive innovation to make solar energy fully cost-competitive with traditional sources by the end of the decade. The awards, announced Tuesday by Energy Secretary Ernest Moniz, will help lower the cost of solar electricity and support a growing U.S. solar workforce.

Navajo Council Approves $4.1 Mil to Complete Negotiations for Navajo Mine

[Navajo-Hopi Observer. Oct. 22] During a special session Oct. 16, council members voted to use $4.1 million from the Navajo Nation's Unreserved, Undesignated Fund Balance (UUFB) to complete negotiations for the acquisition of Navajo Mine from BHP Billiton. Legislation sponsor Council Delegate LoRenzo Bates (Nenahnezad, Newcomb, San Juan, Tiis Tsoh Sikaad, Tse'Daa'Kaan, Upper Fruitland) said the mine acquisition would be a successful venture, citing the track record of BHP Billiton and the Four Corners Power Plant to generate and burn coal for electricity, the "dedicated" and "skilled" workforce already in place at both sites and the Nation's nearly one-hundred year supply of coal. He added technology will continue to advance to provide cleaner methods of coal energy production.

Navajo Nation Council Approves Energy Policy

[Arizona Daily Sun, Oct. 23] The Navajo Nation Council has approved a new tribal energy policy supported by tribal President Ben Shelly. The Daily Times (http://bit.ly/1a6bd9t) reports that the policy was sent to Shelly for his consideration on a 13- 6 vote by the council on Tuesday, the second day of the council's fall session. Shelly has 10 days to act on the measure. He says the tribe must both proceed with purchasing a coal mine while also moving forward with renewable energy sources.

Sides in Arizona Utility Rate Issue Air Ads on TV

[AND.com, Oct. 22] PHOENIX — A debate over whether Arizona should reduce favorable rates that utility customers receive if they sell power from rooftop solar arrays is hitting the airwaves.An ad by a group supported financially by the state's largest utility says the solar customers are profiting at the expense of other customers.Meanwhile, an ad from solar companies say state regulators shouldn't change pro-solar policies.The Arizona Republic (http://bit.ly/1fSGMWG) reports that the ads are being aired in advance of the Arizona Corporation Commission's expected consideration in November of the policy issue known as "net metering."Arizona Public Service Co. wants the commission to reduce the payments that solar customers receive for their excess power.

ALTERNATIVE ENERGY AND EFFICIENCY

8 States Vow 3.3M Zero-Emission Vehicles by 2025

[Associated Press, Oct. 24] Eight states, including California and New York, pledged Thursday to work together to dramatically multiply the number of zero-emission cars on the nation's roads by speeding the construction of charging stations and other infrastructure. The goal is to put 3.3 million battery-powered cars, plug-in hybrids and other clean-burning vehicles on the roads in those states by 2025. That's more than 15 times as many zero-emission vehicles projected to be in use in the entire U.S. by 2015. Auto dealers say networks of charging stations and other conveniences are crucial to winning over drivers who are accustomed to pulling up to the gas pump and

fear getting stranded by a dead battery. The other states in the pact are Massachusetts, Maryland, Oregon, Connecticut, Rhode Island and Vermont. The eight states together represent about 23 percent of the U.S. auto market.

Across America in 12,000 Solar Cells

[Manufacturing.net, Oct. 24] The Solar Impulse is a revolutionary solar powered plane with “the wingspan of a 747, the weight of a mid-sized car, and the power of a scooter.” With more than 10,000 solar cells on board, the plane completed its journey across America on July 6th, 2013. Flying both day and night, Swiss pioneers Bertrand Piccard and André Borschberg, co-founders and pilots of the Solar Impulse, completed the passage without a drop of fossil fuel on board — not even for back up. "We’ve been dreaming about this, and it is happening now," Piccard exclaims. “In the past the protection of the environment was boring and expensive,” but with the Solar Impulse, he hopes to demonstrate the capabilities of clean technology, and to ultimately bring about a clean technology revolution. “People are inspired by aviation. If you can do it in the air, we can do it in our daily life,” he adds. “Our airplane is not designed to carry passengers, but to carry a message.” The U.S. Secretary of Energy, Dr. Ernest Moniz expands on these points, stating that, “the Solar Impulse serves as an inspiring demonstration of solar power. More importantly, it demonstrates the advancement of energy storage and efficiency, system integration, and advanced materials.”

Energy Department Announces $60 Million to Drive Affordable, Efficient Solar Power

[Energy.gov, Oct. 22] WASHINGTON – Building on President Obama’s broad-based plan to cut carbon pollution and support clean energy innovation across the country, Energy Secretary Moniz announced today about $60 million to support innovative solar energy research and development. As part of the Department’s SunShot Initiative, these awards will help lower the cost of solar electricity, advance seamless grid integration and support a growing U.S. solar workforce. “The tremendous growth in the U.S. solar industry over the past few years is helping to pave the way to a cleaner, more sustainable energy future that protects our air and water and provides affordable clean energy to more and more Americans,” said Energy Secretary Ernest Moniz. “Responsible development of all of America’s rich energy resources is an important part of President Obama’s Climate Action Plan and will help ensure America’s continued leadership in clean energy innovation.”

GM to Sell Car Next Year Powered by Gasoline or Natural Gas

General Motors Co will begin selling a mid-sized sedan next summer that can be powered by either gasoline or compressed natural gas, the U.S. automaker's chief executive said on Wednesday.

[Reuters, Oct. 16] WASHINGTON – The 2015 Chevrolet Impala, GM's first car powered by natural gas, will feature a powertrain that switches from compressed natural gas to gasoline seamlessly and has a total driving range of up to 500 miles, Dan Akerson said in a speech to be delivered at an energy summit in Washington. The car, which will have one fuel tank for compressed natural gas and a second one for gasoline, will be sold to both retail and fleet customers. Natural gas is a cleaner-burning, less costly fuel than gasoline, and vehicles powered by compressed natural gas typically emit 20 percent less greenhouse gases than gas-powered cars, GM said, citing the California Air Resources Board. New techniques unlocking vast reserves of natural gas from shale have produced a boom in U.S. supplies and driven down prices, increasing interest in the fuel. The numbers of CNG vehicles remain small. According to the industry group Natural Gas Vehicles for America, about 130,000 to 135,000 natural gas vehicles operate in the United States and more than 16 million globally, most of them commercial and fleet vehicles such as buses and garbage trucks.

Solar Power to the People: The Rise of Rooftop Solar Among the Middle Class

[AmericanProgress.org website, Oct. 21] Homeowners across the United States have begun a rooftop solar revolution. Since 2000, more than 1,460 megawatts of residential solar installations have been installed across the country, and more than 80 percent of that capacity was added in the past four years. In 2012 alone, rooftop solar installations reached 488 megawatts, a 62 percent increase over 2011 installations and nearly double the installed capacity added in 2010. The question is: Who is buying up all of those solar power systems? Through our analysis of solar installation data from Arizona, California, and New Jersey, we found that these installations are overwhelmingly occurring in middle-class neighborhoods that have median incomes ranging from $40,000 to $90,000. The areas that experienced the most growth from 2011 to 2012 had median incomes ranging from $40,000 to $50,000 in both Arizona and California and $30,000 to $40,000 in New Jersey. Additionally, the distribution of solar installations in these states aligns closely with the population distribution across income levels. But many within the electric utility industry have claimed that distributed solar is mainly being adopted by wealthy customers. Concerned by the threat that rooftop solar's rapid growth poses to traditional utility business models, some utility executives have used this claim to support a rising desire within the industry to alter existing solar programs and policies. The idea is that through solar policies such as net metering, middle- and low-income customers who cannot afford to go solar are subsidizing the wealthy customers who can. In this issue brief, we show that rooftop solar is not just being adopted by the wealthy; it is, in fact, mostly being deployed in neighborhoods where median income ranges from $40,000 to $90,000. In the first section, we present the overall findings from our income analysis of solar installation data from Arizona, California, and New Jersey. We then discuss the implications of those results in the context of the current growth of rooftop solar and the ongoing discussion of solar policies that will affect its future growth.

USDA Announces Availability of Funding to Develop Advanced Biofuels Projects

[USDA website, Oct. 21] WASHINGTON – Agriculture Secretary Tom Vilsack today announced the availability of $181 million to develop commercial-scale biorefineries or retrofit existing facilities with appropriate technology to develop advanced biofuels. The U.S. Department of Agriculture (USDA) remains focused on carrying out its mission, despite a time of significant budget uncertainty. Today's announcement is one part of the Department's efforts to strengthen the rural economy. "This financing will expand the number of commercial biorefineries in operation in the U.S. that are producing advanced biofuels from non-food sources," Vilsack said. "USDA's Biorefinery Assistance Program is yet another way USDA is helping to carry out the Obama Administration's 'all-of-the-above' energy strategy to develop every possible source of American-made energy. But the benefits go beyond reducing our dependence on foreign oil. These biorefineries are also creating lasting job opportunities in rural America and are boosting the rural economy as well." The Biorefinery Assistance Program was created through the 2008 Farm Bill and is administered by USDA Rural Development. It provides loan guarantees to viable commercial-scale facilities to develop new and emerging technologies for advanced biofuels. Eligible entities include Indian tribes, State or local governments, corporations, farmer co-ops, agricultural producer associations, higher education institutions, rural electric co-ops, public power entities or consortiums of any of the above.

ENERGY/GENERAL

Energy-Related CO2 Emissions Drop Less Than 4% in 2012

U.S. energy related carbon dioxide (CO2) emissions decreased 3.8 percent in 2012, according to the U.S. Energy Information Administration. Carbon emissions have decreased 12.2 percent from 2007 to 2012. The decline in energy-related CO2 emissions occurred while the economy was growing in 2012. The gross Domestic Product (GDP) increased 2.8 percent in 2012, while energy consumption decreased

2.4 percent, or 2.4 quadrillion Btu, the same year. The result was a 5.1 percent decline in energy use per dollar of GDP, and this meant emissions were about 282million metric tons CO2 lower. Half of the overall energy decline were in the residential sector with 1,213 trillion Btu, or 5.7 percent, thanks to a warm first quarter that lowered energy demand and emissions. Coal-to-gas conversions also helped to lower emissions last year, the report said.

Energy Storage Database Demonstrates Project, Technology Diversity

[Fierce Energy, Oct. 25] The U.S. Department of Energy's (DOE) first-of-its-kind international energy storage database has surpassed 420 documented energy storage projects from around the world. The database provides free, up-to-date information on grid-connected energy storage projects and relevant state and federal policies. It is funded through DOE's Sandia National Laboratories, and has been operating since January 2012. "This database shows the impressive diversity of energy storage projects across the globe, as well as the broad services they provide," said Dr. Imre Gyuk, DOE's energy storage program manager.The Energy Storage Database lists 420 energy storage projects from 34 countries with a combined 123 GW of installed capacity. More than 50 energy storage technologies are represented worldwide, including multiple battery technologies, compressed air energy storage, flywheels, gravel energy storage, hydrogen energy storage, pumped hydroelectric, superconducting magnetic energy storage, and thermal energy storage. The policy section of the database shows 18 federal and state policies addressing grid connected energy storage, from rules and regulations to tariffs and other financial incentives.

Panama Canal Expansion Will Boost U.S. Exporting of Natural Liquids Gas to Asia

[Bloomberg, Oct. 21] U.S. exports of natural gas liquids, already at a record amid surging output from shale deposits, are poised to quadruple by 2020 as the expansion of the Panama Canal cuts shipping costs to Asia. Deliveries of the fuels to foreign buyers averaged 555,000 barrels a day in July, the most in U.S. government data going back to 1981. China’s imports of propane, butane and isobutane, with uses as varied as home heating, chemical manufacturing and refrigeration, jumped 23 percent in August from a year earlier, customs data show. The Panama Canal expansion, slated for completion in 2015, will allow the transit of large tankers and put costs to ship U.S. gas liquids to Asia on a par with deliveries from the Middle East, according to Sanford C. Bernstein & Co. U.S. exports would jump to 20 million metric tons by 2020 from the current 5 million tons, making the country the world’s largest exporter of those fuels, ahead of Qatar and Saudi Arabia, Bernstein said.

INDUSTRIES AND TECHNOLOGIES

Amping Up Solar in the Snowy North

[Science Daily, Oct. 22] Solar farms are a no-brainer in warm and sunny places, but what about in northern climes where snow can cover and even shut down the panels? Michigan Technological University's Keweenaw Research Center (KRC) is now part of a two-year study that will help answer that question. The aims are to gauge how snow affects solar panels' power generation and determine the best ways to overcome any losses. The international engineering firm DNV GL, which specializes in large energy- and sustainability-related projects, has built an array of solar photovoltaic panels behind KRC, each set at a different angle, from 0 degrees (flat) to 45 degrees. "If you tilt them at 60 degrees, almost no snow sticks to the panels, but you also lose a lot of sunlight when they are not facing the sky," said Tim Townsend, a principal engineer for solar services with DNV GL. Based on similar studies, year-round losses can be anywhere from a few percent (as found by Michigan Tech in a study looking at Ontario data) to 12 percent (39 degree tilt) to 18 percent (0 degree tilt), which Townsend measured near Lake Tahoe in California. Townsend's group developed a model to predict how snowfall and other related variables would affect energy generation. Now, they will test their model in collaboration with Michigan Tech using data from the KRC

solar array and other test sites in Colorado, Pennsylvania and California. A small variance in power generation may not make a big difference for a homeowner with solar panels. However, it's a big deal in industry.

DOE Launches 7 CHP Technical Assistance Centers

[Energy Manager Today, Oct. 24] The Energy Department has launched seven new regional Combined Heat and Power Technical Assistance Partnerships across the country in a bid to strengthen US manufacturing competitiveness, lower energy consumption, and reduce harmful emissions. Located in California, Colorado, Illinois, New York, North Carolina, Pennsylvania and Washington state, these organizations will offer best practices for CHP project financing, management and state policies, market analysis tools and resources, and technical site evaluations.

Fracking for Geothermal Heat Instead of Gas

AltaRock has figured out how to use fracking to get more heat out of a geothermal well, but work remains before the energy source can dent carbon emissions.

[MIT Tech Review, Oct. 21] The use of hydraulic fracturing has unlocked vast new reserves of natural gas. Now Alta Rock, a startup based in Seattle, is developing technology that might do the same for geothermal resources, turning a marginal power source into a major source of carbon-free electricity and heat in the United States. Earlier this year near the Newberry Volcano in Oregon, Alta Rock demonstrated a key part of that technology, a process akin to fracking. Just as fracking involves pumping high-pressure liquid into underground shale formations to unlock natural gas and oil that's been trapped there, the new technology could unlock heat trapped deep underground. Unlike solar and wind power, that heat would be available around the clock and in all sorts of weather. Geothermal power plants now provide a tiny fraction of the world's energy needs—in the U.S., one of the world's biggest producers of geothermal energy, the total geothermal capacity is about 1 percent of the country's coal power capacity. The main problem is that conventional geothermal plants rely on a rare combination of geological features. Hot rock has to be accompanied by large amounts of hot water or steam that can easily be pumped to the surface, where it would drive steam turbines to generate electricity. The rock formation needs to be porous enough that the water can be continuously recirculated and reheated to keep a power plant running. (Geothermal pumps are sometimes used to heat and cool homes, but these are inadequate for generating electricity because they work at much lower temperatures.) Although such formations are rare, the amount of heat underground is actually huge (see "Abundant Power from Universal Geothermal Energy"). There's enough heat trapped under the United States within drilling distance (as deep as 10 kilometers) to supply its energy needs for thousands of years. AltaRock is one of several companies trying to figure out how to access more of that heat (see "Cracking Rock to Get More from Geothermal Fields" and "Using CO2 to Extract Geothermal Energy").

Fuel Cell Equinox Tops 100,000 Miles in Real-World Driving

[Fuel Cell Today, Oct. 24] One of General Motors' fuel cell research vehicles recently passed a milestone for a hydrogen-powered vehicle, topping 100,000 miles of real-world driving. By using renewable hydrogen, this vehicle has saved 5,260 gallons of gasoline. At $3.50 per gallon, that's more than $18,000 in fuel cost savings. The specially equipped 2007 Chevrolet Equinox was part of GM's 119-vehicle Project Driveway program, launched in 2007. To date, GM's fuel cell test fleet has accumulated nearly three million miles, more than any other automaker. By GM's calculations, the fleet has saved 157,894 gallons of gasoline – more than $552,631 in avoided fuel cost. During Project Driveway, the 100,000-mile Fuel Cell Equinox operated as a fleet vehicle at Walt Disney Company's studio in Burbank. After Project Driveway, it became an engineering development vehicle driven by as many as ten GM engineers.

Stem Offers Power-Storage Systems Using Solar Lease Model

[Bloomberg, Oct. 24] Stem Inc., a provider of energy-storage technology, is offering battery systems to commercial and industrial customers with no upfront costs by adapting a financing model that's accelerated the installation of rooftop solar panels. Stem will be able to install about 15 megawatts of systems using a $5 million investment from Clean Feet Investors I LLC, the Millbrae, California-based company said today in a statement. The company is offering long-term financing options that are similar to the solar leases and power-purchase agreements widely used by companies including SolarCity Corp. (SCTY) and Sunrun Inc. The battery systems let customers reduce their peak power-demand expenses and cut utility bills by 10 percent to 40 percent, said Prakesh Patel, Stem's vice president of capital markets and strategy.

LEGISLATION AND REGULATION

Chicago to Make It Faster, Cheaper to Add Solar Power

[Chicago Tribune, Oct. 21] Chicago is getting a new, streamlined process for solar installations that policymakers hope will lead to more panels on more roofs. City officials say the reforms -- developed with a $750,000 grant from the U.S. Department of Energy -- will slash wait times for solar permits for small projects from 30 days to one and cut fees by 25 percent, to $275. The DOE's SunShot Rooftop Solar Challenge is a national initiative to make solar power cost competitive with other forms of energy by the end of the decade. Chicago launched a web site Monday – solar.cityofchicago.org – it says is a "one-stop shop" for getting rooftop solar approved, installed and connected.

Earthjustice, Sierra Club Sue EPA to Clean Up Seven Coal-Burning Power Plants in PA

[Power Engineering, Oct. 22] Earthjustice and the Sierra Club filed a federal lawsuit today against the Environmental Protection Agency (EPA) for not answering Sierra Club petitions regarding air pollution from seven coal-burning power plants in Pennsylvania, according to an Earthjustice press release. Major air pollution sources must obtain permits under Title V of the Clean Air Act. Sierra Club filed petitions with EPA describing fatal flaws in the permits for the seven plants and asking EPA to object to the permits. EPA has failed to grant or deny the permits within its 60-day deadline.

IEA Charts Future for Wind Energy

[UPI, Oct. 22] PARIS – Wind energy is one of the bright spots in the renewable energy sector but more support is needed to advance its potential, the IEA said. The International Energy Agency, which has headquarters in Paris, said wind energy could meet 18 percent of the world's electricity needs by 2050, compared with 2.5 percent today, with the right policies in place. The IEA said onshore wind energy development was making substantial progress while offshore wind development was slowly moving beyond its infancy. The United States recently consented to the development of its first offshore wind projects and the United Kingdom has 46 megawatts of offshore projects planned for the future. In a 53-page report published Monday, the IEA said wind energy has the potential to save as much as 4.8 gigatons of CO_2 emissions by 2050, which is more than the current output from the European Union. The agency, however, said more financial and regulatory support is needed for global wind energy development.

United States Urges Flexibility in New Global Climate Deal

[Reuters, Oct. 22] LONDON – The United States called on Tuesday for a more flexible approach to a new United Nations' climate deal which balances the needs of all countries and has a better chance of success. Two years ago, some 190 countries agreed to develop a pact to succeed the Kyoto Protocol which would force all nations to cut their greenhouse gas emissions. The deal is to be signed by 2015 and come into force in 2020. Countries will meet again next month to work on the content and

design of the new deal in Warsaw but progress this year has been slow. Meanwhile, a scientific consensus that mankind is to blame for global warming has grown, putting pressure on governments - many of which have been focused on spurring weak economies rather than fighting climate change - to commit to ambitious emissions cuts.

Western Governors Urge Modification of Renewable Energy Investment Tax Credit

[WGA website, Oct. 22] Western Governors are urging a modification of the Section 48 Renewable Energy Investment Tax Credit (ITC) from a "placed in service" standard of eligibility to a "commence construction" standard. The letter was signed by Colorado Gov. John Hickenlooper, the WGA Chairman, and Nevada Gov. Brian Sandoval**,** WGA Vice Chairman. The letter was sent to Sens. Max Baucu**s** and Orrin Hatch (Chairman and Ranking Member, respectively, Senate Committee on Finance), as well as Reps. Dave Camp and Sander Levin (Chairman and Ranking Member, respectively, House Committee on Ways & Means).

WESTERN POWER

All Solar, As with Politics is Local

[U-T San Diego, Oct. 18] Recent conclusions from the California Public Utilities Commission (CPUC) about the negative impact of rooftop solar on ratepayers in California stirred a wave of acrimony between utility supporters and solar industry representatives. At the center of the debate is "net metering," which basically requires utilities to pay people who install solar panels on their roof for any surplus power they produce. At issue is the cost for utilities to upgrade their transmission in order to absorb that surplus power into the grid. According to the CPUC's study, integrating rooftop solar, while decreasing electricity costs for those homes with solar, will actually mean higher rates for homes without solar. Naturally, solar advocates argue the opposite is true — that net metering actually saves grid infrastructure costs. But the debate misses the broader point: solar has different impacts in different places. Current conclusions rely on a one-size-fits-all approach, including the data from the CPUC, when in reality, various geographic regions will see more benefits than others from distributed (rooftop) solar energy. While the research from the CPUC is an encouraging sign that ongoing debate will be rooted more squarely in independent data, we still need more localized, market-specific studies. In some markets with aging transmission infrastructure, solar reduces costs for everyone because the utility can avoid investing in expensive infrastructure upgrades. In areas where the grid is newer and has greater capacity, distributed solar energy may not be as mutually beneficial. We need to look harder at the data and work together to achieve the right public policy that best serves the interests of local communities. Solar is no longer just a regulatory issue. As residential solar installations rapidly increase due to new financing models that threaten traditional utility business models, net metering is becoming less about regulation and more about politics. Poised to already meet or exceed the renewable energy regulatory mandates set in front of them, utilities in states such as Arizona and Florida are essentially trying to put rooftop solar incentives back in the bottle and keep their customer bases stable. Now we have a situation in which consumer choice is pitted against utilities' concern over past infrastructure investments and the potential for higher electricity rates for non-solar customers. Politicians on both sides of the aisle have been drawn into the fight — leaving the public confused from a slew of misinformation.

Tres Amigas Finds Partner for Software

[Albuquerque Business , Oct. 25] Sapient Global Marketing and Tres Amigas LLC have teamed up to develop the software that will power the company's "superstaion" in Southeast New Mexico. Tres Amigas is working on building a $500,000 electricity station that will connect the nation's three power grids. The company is in the midst of fundraising now and expects to break ground in early 2014. Sapient will develop the

software that will control the hardware and auxiliary services for the station.

UNLV's No. 2 Finish in Solar Homebuilding Competition Deemed 'Remarkable'
[Las Vegas Review-Journal, Oct. 22] University of Nevada, Las Vegas' entry into its first-ever design-build competition was a success, judging by the public's reaction and the judges'. Team Las Vegas' DesertSol vacation home took second place in the Department of Energy Solar Decathlon, a biennial competition that challenges college students to build solar-powered homes that are attractive, affordable and efficient. Team Austria, from Vienna University of Technology, placed first, with 951.9 points out of 1,000. UNLV's entry earned 947.6 points. The Czech Republic placed third. The 4.35 difference was the closest win in the history of the decathlon, which has held six competitions since 2002. In 2011, winning teams of Maryland and Purdue were separated by nearly 20 points. In 2009, Team Germany beat Illinois by almost 11. "The second place finish by UNLV's DesertSol house is remarkable for a first time entrant," said Richard King, director of the Solar Decathlon. "Incidentally, UNLV tried to get into previous competitions, but their proposals were not deemed worthy," King said. "Over 40 proposals are typically received, but only 20 accepted. … After two years of design and hard work, they had a lot to prove, and they did." UNLV architecture professor Eric Weber, who oversaw the project, said that he went into the competition feeling confident, but that the performance still exceeded his expectations. "We certainly surprised a few people outside our region and outside our university," Weber said. "We know we have good people, but now others do."

Western Governors Make Progress in Efforts to Streamline Federal Regulations for Transmission Projects
[WGA website, Oct. 16] Western Governors are making progress in efforts to work as partners with the administration to streamline federal regulations for permitting, review and siting of transmission projects in the West. Large infrastructure projects in the West -- where federal, state and private lands are often impacted -- pose complicated and expensive challenges that involve myriad approvals and jurisdictional authorities. Streamlined federal-state regulatory processes can reduce conflict and financial risk in building such complex projects. Western Governors began the process of working with the Administration on specific projects in the West by reaching out to Nancy Sutley**,** Chair of the White House Council on Environmental Quality, in the wake of President Obama's June 7th Memorandum: "*Transforming our Nation's Electric Grid Through Improved Siting, Permitting and Review*." The governors noted at that time that "the effort of designating and developing Western energy corridors and streamlining permitting, review and siting is improved if states are included as equal partners."

ARIZONA STATE INCENTIVES/POLICIES

ARIZONA COMMERCE AUTHORITY (ACA)

- Angel Investment Tax Credit Program - The main objective of the Angel Investment program is to expand early stage investments in targeted Arizona small businesses. The program accomplishes this goal by providing tax credits to investors who make capital investment in small businesses certified by the Arizona Commerce Authority (ACA). To view the list of businesses that have been certified under this program please click here. LEARN MORE

- Arizona Innovation Accelerator Fund - The Arizona Innovation Accelerator Fund Program is an $18.2 million loan participation program funded through the U.S. Department of Treasury's SSBCI and managed by the Arizona Commerce Authority. The goal of this program is to stimulate financing to small businesses and manufacturers, in collaboration with private finance partners, to foster business expansion and job creation in Arizona. LEARN MORE

- Arizona Innovation Challenge - The Arizona Innovation Challenge is an investment in the minds of talented entrepreneurs in Arizona and around the world.

The ACA will award $1.5 million to the most promising technology ventures that participate in the Challenge (awards may range from $100,000 to $250,000). LEARN MORE

- AZ Fast Grant - Enables Arizona-based technology companies to initiate the commercialization process. Total funds available for this grant round are $175,000. Maximum awards of $5,000 and $20,000 will enable companies to accomplish one of four scopes of work. LEARN MORE

- AZ Step Grant - Grant funding from the U.S. Small Business Administration (SBA) with matching funds contributed by the Arizona Commerce Authority (ACA) offering a number of services and tools to Arizona small businesses as they go global for the first time with sales or enter new, international markets. LEARN MORE

- Commercial/Industrial Solar Energy Tax Credit Program - The primary goal of the Commercial/Industrial Solar Energy Tax Credit Program is to stimulate the production and use of solar energy in commercial and industrial applications by subsidizing the initial cost of solar energy devices. The program achieves this goal by providing an Arizona income tax credit for the installation of solar energy devices in Arizona business facilities. LEARN MORE

- Healthy Forest - The primary goal of the Healthy Forest Enterprise Incentives Program is to promote forest health in Arizona. The program achieves this by proving incentives for certified businesses that are primarily engaged in harvesting, processing or transporting of qualifying forest products. LEARN MORE

- Job Training Program offers job-specific reimbursable grants for employers creating new jobs or increasing the skill and wage level of their current employees. Deadline: Year Round. LEARN MORE

- Renewable Energy Tax Incentive Program offers a refundable income tax credit and property tax reduction to companies in solar, wind, geothermal and other renewable energy industries who are expanding or locating a manufacturing or headquarters operation in Arizona. The tax credit is up to 10% of the total qualified investment amount and the property tax benefit can reduce a company's property taxes by up to 75%. Deadline: Year Round. LEARN MORE

- Research and Development Tax Credit is an Arizona income tax credit for increased research and development activities conducted in this state. Starting in 2010, a qualifying company may be eligible to claim a partial refund of its current year excess R&D credit. Applicants may apply at the end of their tax year but prior to filing a tax return with Revenue. LEARN MORE

Quality Jobs Tax Credit Program - The primary goal of the Quality Jobs Tax Credit program is to encourage business investment and the creation of high-quality employment opportunities in the state. The program accomplishes this goal by providing tax credits to employers creating a minimum number of net new quality jobs and making a minimum capital investment in Arizona. LEARN MORE

- **Bonds Administered by the Arizona Commerce Authority**
  - Private Activity Bonds (PAB) - Tax exempt bond financing, for federal purposes, offers an alternative financing mechanism for certain projects. LEARN MORE
  - Qualified Energy Conservation Bonds (QECB) - Tax credit bonds are available as an alternative financing mechanism for certain green projects. LEARN MORE

- **Federal Programs**
  - Small Business Innovation Research (SBIR) Program - SBIR is a competitive program that encourages small businesses to explore

their technological potential, as well as, providing incentive to profit from its commercialization. LEARN MORE

- Small Business Technology Transfer (STTR) Program - STTR is an important small business program that expands funding opportunities to meet the nation's scientific and technological challenges in the 21st century. LEARN MORE
- Work Opportunity - The Work Opportunity Tax Credit (WOTC) is a federal tax credit of up to $9,000 that Congress provides to private-sector businesses for hiring individuals from nine target groups who have consistently faced significant barriers to employment. LEARN MORE

Pollution Control Tax Credit - Provides a 10 percent income tax credit on the purchase price of real or personal property used to control or prevent pollution.

Renewable Energy Production Tax Credit - An income tax credit awarded to utility-scale generation systems based on the amount of electricity produced annually for a 10-year period using solar or wind energy. Questions can be directed to Georganna Meyer (602-716-6927) or Elaine Smith (602-716-6924).

Sales Tax Exemption for Machinery and Equipment
Exemptions are available for:

1. Machinery or equipment used directly in manufacturing, see ARS 42-5159(B)(1).
2. Machinery, equipment or transmission lines used directly in producing or transmitting electrical power, but not including distribution, see ARS 42-5159(B)(4).
3. Machinery or equipment used in research and development, see ARS 42-5159(B) (14).

Questions can be directed to Christie Comanita (602-716-6791).

Solar Liquid Fuel Tax Credit - Income tax credits are available for research and development, production and delivery system costs associated with solar liquid fuel. Questions can be directed to Georganna Meyer (602-716-6927) or Elaine Smith (602-716-6924).

Database of State Incentives for Renewables and Efficiency (DSIRE)

- Arizona Incentives/Policies
- Federal Incentives/Policies
- Solar Policy News - DSIRE provides summaries of current solar policy developments and an archive of past solar policy developments. Current solar news appears below the news archive, which is searchable by several criteria.

GRANTS

The following solicitations are now available:
(Click on title to view solicitation)

- U.S. Dept. of Agriculture - Rural Development Grant Assistance
- Bio-refinery Assistance Program – Response due October 31, 2013
- Energy, Power, and Adaptive Systems – Response due November 1, 2013
- Electronics, Photonics, and magnetic Devices - Response due November 1, 2013
- USDA Rural Community Development Utilities Programs - Response due November 12, 2013

- SunShot Initiative - Responses due November 20, 2014
- SBIR/STTR FY 2014 Phase II Release 1, Reference Number: DE-FOA-0001019 – Response Due Date: 12/10/2013 11:59:00 AM ES
- Solid Waste Management Grant - Response due December 31, 2013
- Energy Frontier Research Centers – Response due by January 9, 2014
- Environmental Sustainability - Response due February 20, 2014
- Energy for Sustainability - Response due February 20, 2014
- Environmental Health and Safety of Nanotechnology - Response due February 20, 2014
- Particulate and Multiphase Processes- Response due February 20, 2014
- Thermal Transport Processes - Response due February 20, 2014
- SunShot "Race to the Roof" Initiative - Registration due October 31,2014
- Repowering Assistance Program – Ongoing
- Rural Business Enterprise Grants– Ongoing
- Rural Business Opportunity Grants– Ongoing
- Renewable Energy RFPs - Solicitations for Renewable Energy Generation, Renewable Energy Certificates, and Green Power – Various Deadlines

ENERGY-RELATED EVENTS

2013

- Fall 2013 - Solar and Sustainable Buildings Tours
  Living with the Sun - Arizona Style 2013 - Tours of Solar and Sustainable Buildings
  Arizona Governor Jan Brewer has issued a proclamation designating October as Solar and Renewable Energy Month, recognizing the American Solar Energy Society's annual National Solar Tour of solar installations and energy sustainable buildings. As part of the National Tour, events in Arizona include a lecture and local tours on different weekends in different parts of the state. The tours provide an opportunity for the public to see solar and green building examples in person. Tours in Arizona can be experienced throughout the month at the following Arizona locations:

  - November 2 - Pine, AZ
  - November 9-10 - Tucson Innovative Home Tour

- NGV Bridge Market Development & Infrastructure Summit 2013
  October 29-30 Boston, MA

- **NEW!** 2013 Transportation Summit
  November 15 (7:30am-9:00am) Chandler, AZ

- AWEA Wind Energy Fall Symposium
  November 6-8 Colorado Springs, CO

- Expo Industrial Convention
  Nov. 7-8 Hermosillo, Sonora Mexico

- Border Energy Forum XX
  November 6-9 San Antonio, TX

- Power Generation Week

November 12-14 Orlando, FL

- **NEW!** Adapting to a Water-Stressed West
  November 4 ASU – Tempe, AZ

- **NEW!** 2013 North American NGV Conference & Expo
  November 18-21 Atlanta, GA

- GreenBuild International Conference and Expo
  November 20-22 Philadelphia, PA

- Ecobuild America 2013
  December 9-13 Washington, D.C.

- Green Building Lecture Series
  Granite Reef Senior Center Scottsdale, AZ

2014

- Energy, Utility & Environment Conference
  February 3-5, 2014 Phoenix, AZ

- 2014 Energy Outlook Conference
  February 4-7, 2014 Washington, DC

- Green Biz Forum 2014
  February 18-20, 2014 Phoenix, AZ

- Green Building Lecture Series
  Granite Reef Senior Center Scottsdale, AZ